

From Technology to Product

Maturing the RISC-V Ecosystem



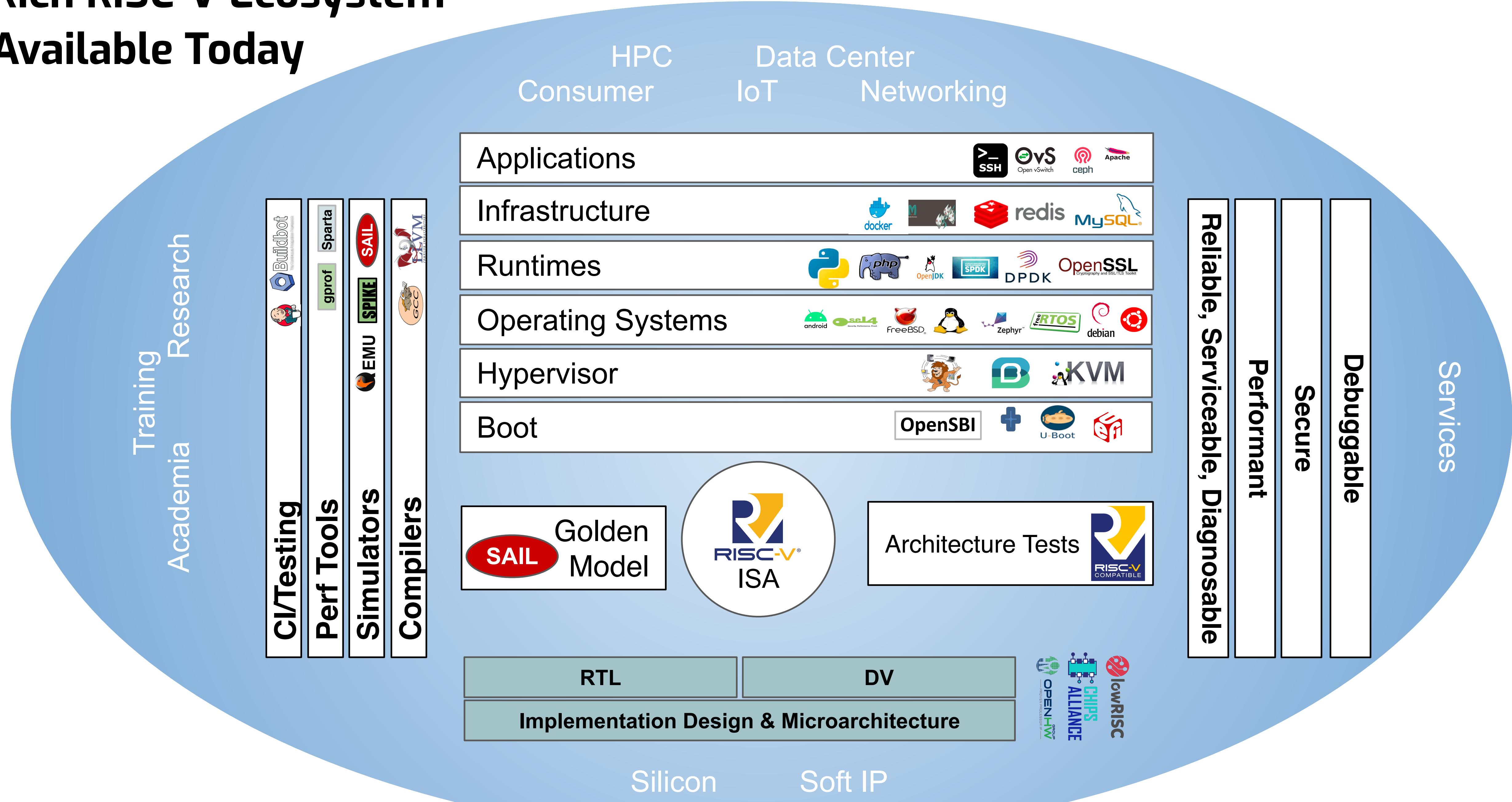
Mark Himmelstein
Chief Technology Officer, RISC-V International



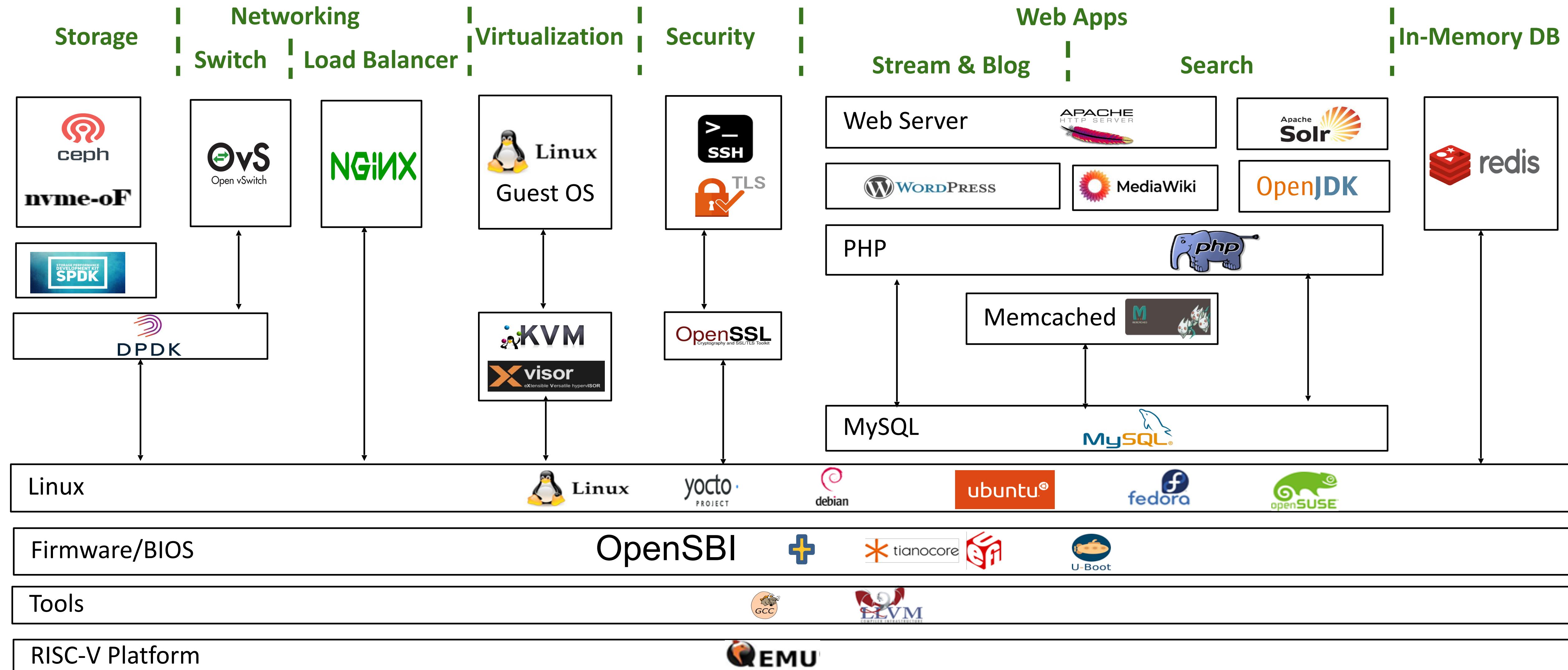
Dr. Philipp Tomsich
Chief Technologist & Founder, VRULL GmbH

Rich RISC-V Ecosystem

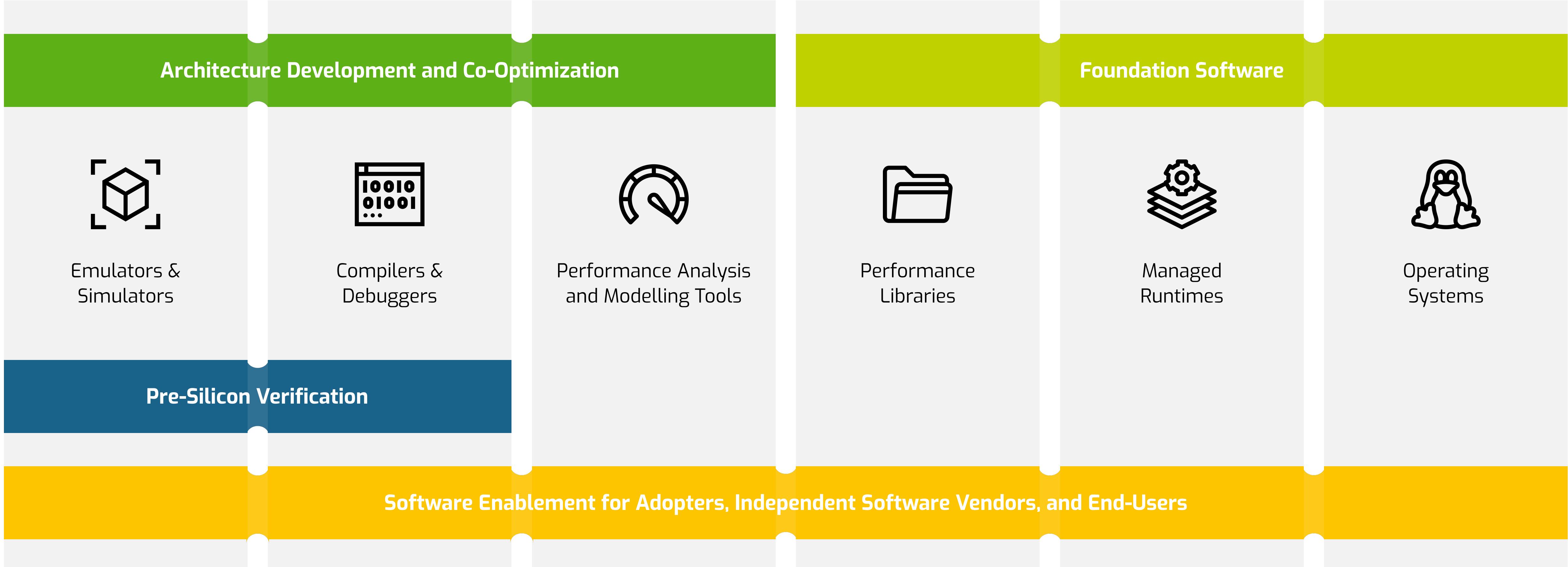
Available Today



Software Stack Examples



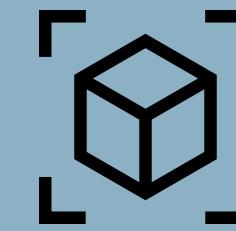
Addressing stakeholder needs in the ecosystem



The three principles of the RISC-V ecosystem



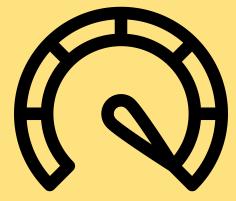
Simplified workflow for end-to-end performance



Performance Modelling

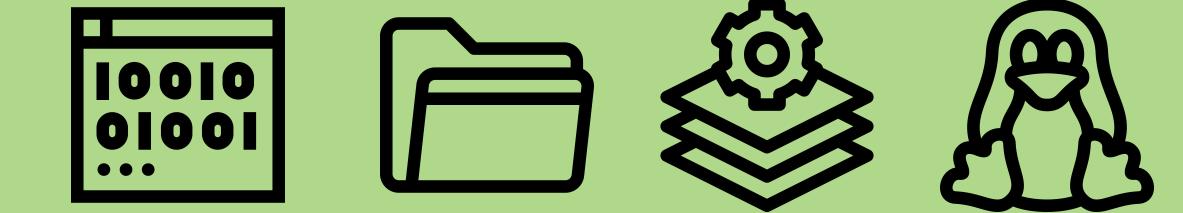
Collaboratively built
easy-to-use performance
modelling framework
for RISC-V

SPARTA
modelling
framework



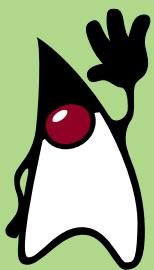
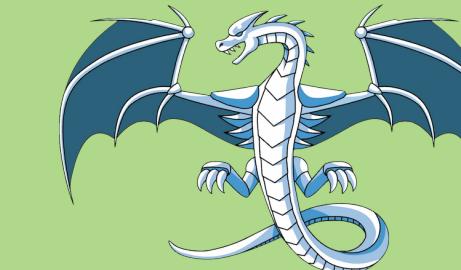
Performance Analysis

Performance monitoring
built into the architecture
and enabled by the
best-in-class analysis tools



Optimised code-speed

Cross-vendor
collaboration provides
optimised open source
compilers and runtimes



Modularity + Customisation = Innovation

Modular ISA



Vendor-defined (custom) ISA extensions

Created policies for naming of custom instructions to support **coexistence** across common open-source tools.

Tools and simulators

Community-adoped policies for including **publicly documented** vendor-defined extensions in key open-source tools.

RISC-V Profiles will enhance the usability.



Dynamic discovery

Multiple mechanisms to select **optimised code paths** are fully implemented in libraries and the Linux kernel

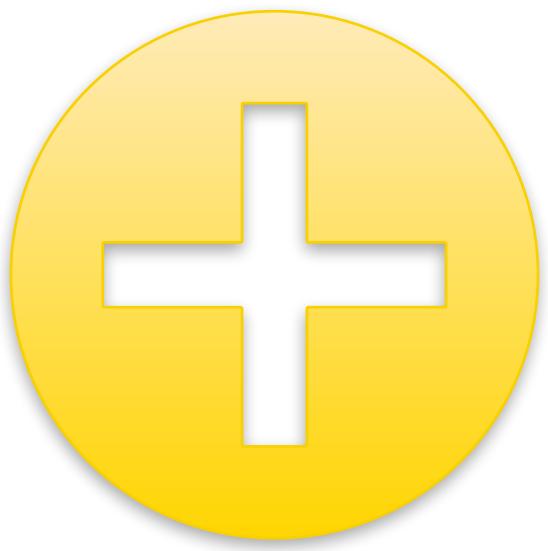
Optimised cache management, cryptography, and string functions are **just the beginning**.



OpenSSL
Cryptography and SSL/TLS Toolkit

OpenJDK19 will natively support RISC-V

RISC-V compiler support merged on March 24th, 2022



<https://github.com/openjdk/jdk/commit/5905b02c0e2643ae8d097562f181953f6c88fc89>

Android 12 running on RISC-V with optimised AI performance

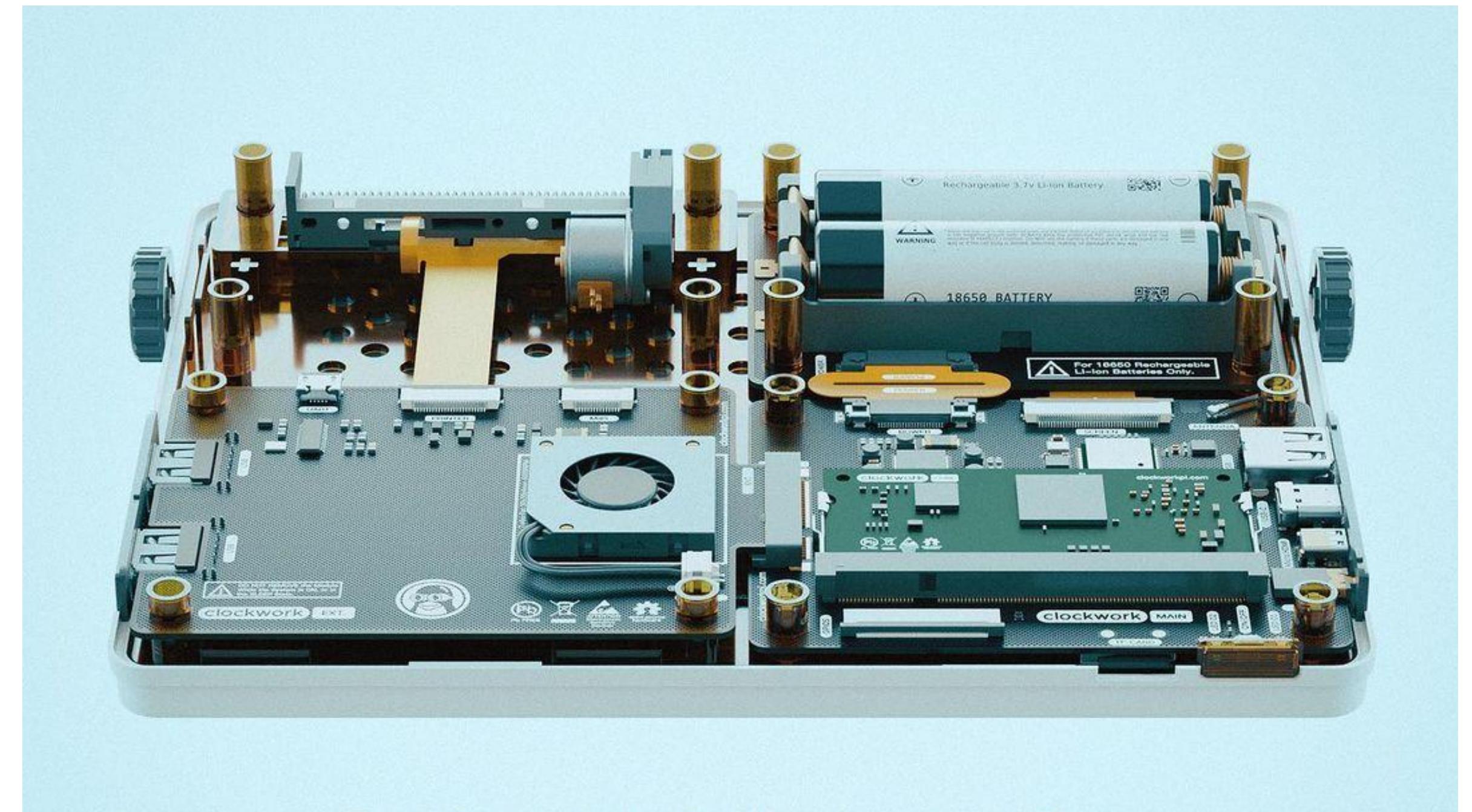


<https://chipsalliance.org/announcement/2022/04/21/alibaba-cloud-announced-progress-in-porting-android-functions-onto-risc-v/>

<https://www.techradar.com/news/alibaba-cloud-is-close-to-getting-android-working-on-risc-v-silicon>

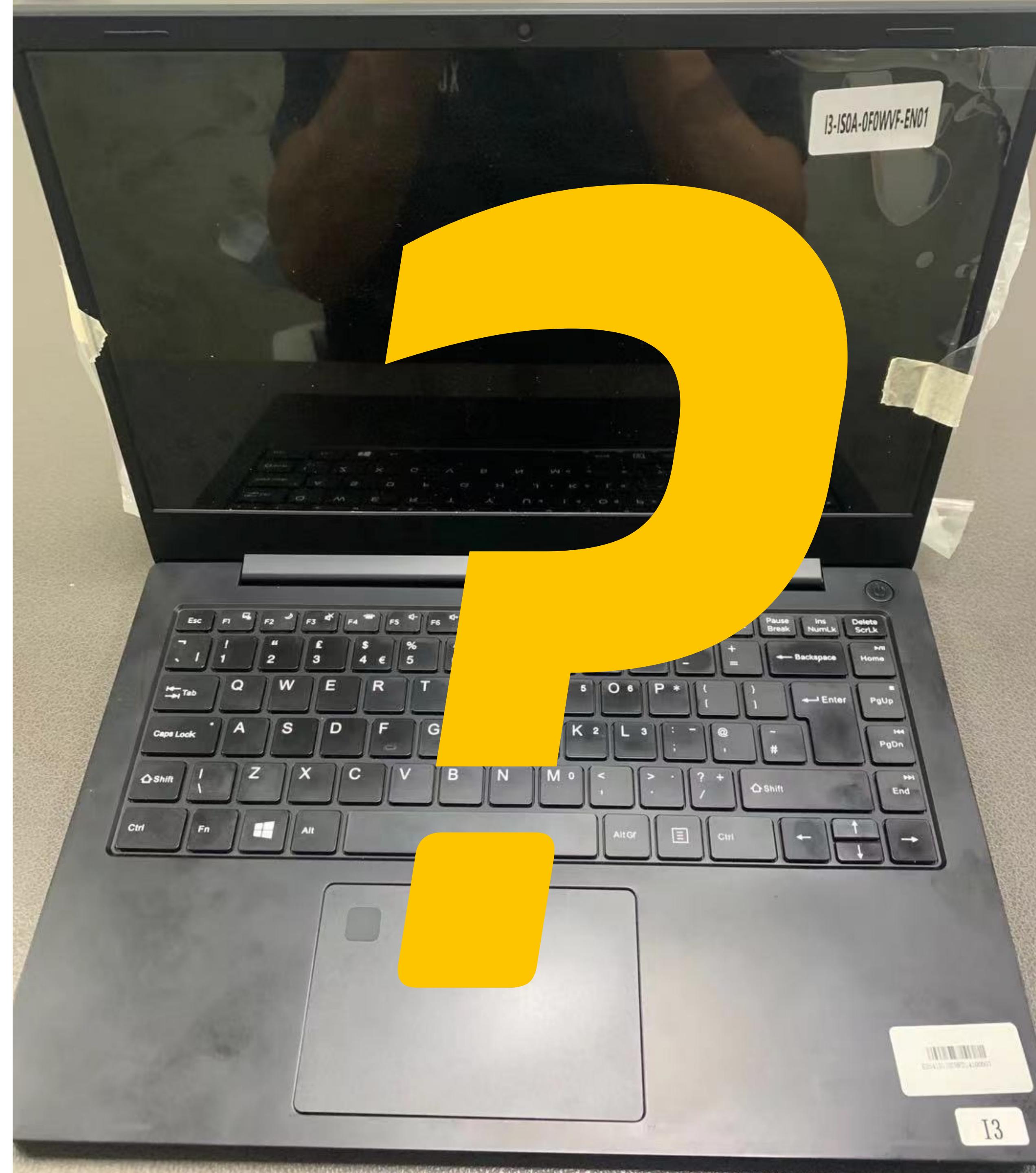
ClockworkPI announced the DevTerm R-01

A turnkey development kit for educators and hobbyists



<https://www.hackster.io/news/clockwork-pi-launches-highly-experimental-risc-v-variant-of-its-compact-devterm-portable-pc-021ad546e675>

**Will we see the
first RISC-V laptop
released in 2022?**



Thank you!

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